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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/708,498	11/09/2000	Katsunori Kawano	100390.01	4183

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT

PAPER NUMBER

1756

3

DATE MAILED: 04/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF=3

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/708,498		KAWANO ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Martin J Angebrannt		1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 November 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 51 and 52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 51 and 52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/056798.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 3-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 3-5 “photoisomarizable” is a misspelling, please replace it with - - photoisomerizable- -.

In claim 6, at line 2, please replace “polyester-type” with - - polyester- - .

In claim 7 at line 1, please replace “forth and claim” with - - forth in claim - - .

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,2,51 and 52 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Chen et al. "Real-time holography in azo-dye-doped liquid crystals", Opt. Lett., Vol. 17(6), pp. 441-443 (03/1992).

Chen et al. "Real-time holography in azo-dye-doped liquid crystals", Opt. Lett., Vol. 17(6), pp. 441-443 (03/1992) exemplifies the recording of polarization holograms using Methyl Red sodium salt (4-dimethylamino**azobenzene**-2'-carboxylic acid with a nematic LC as the recording medium and polarized argon ion laser beams

4. Claims 1,2,4,51 and 52 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Todorov, L., et al., Polarization Holography. 3: Some Applications of polarization holographic recording", Appl. Opt., Vol. 24(6) pp. 785-788 (3/1985).

Todorov, L., et al., Polarization Holography. 3: Some Applications of polarization holographic recording", Appl. Opt., Vol. 24(6) pp. 785-788 (3/1985) exemplifies the recording of polarization holograms using Methyl Orange (4[[4-dimethylamino)phenyl]**azo**]benzene sulfonate) with polyvinyl alcohol as the recording medium and polarized argon ion laser beams. This includes the multiplexed holograms shown in figures 2.

5. Claims 1,2,4 and 7 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Savant et al. '221.

Savant et al. describes polyethylene vinyl alcohol grafted with polyamide with various azo dyes dispersed therein in examples XIII-XX. The structure of these azobenzene dyes are shown in columns 9-18. The use of disks as the substrate are disclosed. (8/4-14 and 26/6-23 and examples described at 24/9-19). The recording of holograms including polarization multiplexing is disclosed. (25/46-26/5).

6. Claims 1,2,4,7, 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savant et al. '221.

It would have been obvious to use the described medium to record holograms including polarization multiplexed holograms based upon the direction to do so in columns 25-26.

7. Claims 1-5 and 51-52 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Natansohn et al. '381.

Natansohn et al. '381 describes polyesters with pendant azobenzenes. (4/40-5/64). The section entitled "Optical Image Recording" in column 7 evidenced the recording of polarization holograms in media containing both a polymer and a polymer containing an azobenzene structure. (7/38-8/12). The use of polyesters as the backbone is disclosed. (4/41-5/63).

8. Claims 1-6 and 51-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eich et al. '784.

Eich et al. '784 discloses a mixture of isomerizable compounds (6/24-54). Polymeric liquid crystals including polyesters are disclosed, (7/27-9/34). The recording of information using an argon ion laser and the use of two polarized laser beams is disclosed. (14/59-15/29).

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It would have been obvious to use the described media including those containing polyester LCs to record holographic information using linearly polarized laser light based upon the direction to do so.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Todorov, L., et al., Polarization Holography. 2: Polarization holographic gratings in photoanisotropic materials with and without intrinsic birefringence", Appl. Opt., Vol. 23(24) pp. 4588-4591 (12/1984) and Todorov, L., et al., Polarization Holography. 1: A new high-efficiency organic materials with reversible photoinduced birefringence", Appl. Opt., Vol. 23(23) pp. 4309-4312 (12/1984) describe holograms recorded using Methyl Orange in PVA.

The Merck Index, Merck & Co., Inc. (1983) pp. 874 in entry 5975 discloses the chemical structure of Methyl Orange.

Kamezaki JP 06-186667, Irie et al. JP 61-215543 disclose azo dyes used in recording media.

JP 02-260127 teaches polarization recording using the photochromic dye shown on page 2 and 3.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the


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organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703/308-0661.



Martin J Angebranndt  
Primary Examiner  
Art Unit 1756

April 10, 2002